

REMARKS

In the foregoing amendment, claim 1 is amended. Now pending in the application is claims 1-6, of which claim 1 is independent.

Claim Amendments

Applicants amend claim 1 to clarify the scope of the claimed invention. In particular, claim 1 is amended to recite that the cathode exhaust gas pipe sucks the purged hydrogen gas, which is introduced through the inlet and stored in the reservoir, through the holes and discharges the purged hydrogen gas diluted by mixing with the cathode exhaust gas. Support for the claim amendment can be found in the originally filed claims, descriptions and figures. No new matter is added.

Rejection of Claims 1-6 under 35 U.S.C. §103

Claims 1-6 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0142200 (“Formanski”) in view of U.S. Patent No. 6,237,336 (“Feucht”). Applicants respectfully traverse the rejection for the following reasons.

Claim 1 is directed to an apparatus for the dilution of a hydrogen gas discharged from a fuel cell. The apparatus includes a reservoir for storing the hydrogen gas discharged from the fuel cell. The apparatus also includes a cathode exhaust gas pipe penetrating the reservoir. The cathode exhaust gas pipe has holes inside the reservoir. When the cathode exhaust gas flows, the cathode exhaust gas pipe sucks the hydrogen gas stored in the reservoir through the holes, and discharges the hydrogen gas that is diluted by being mixed with the cathode exhaust gas.

Applicants submit that the combination of Formanski and Feucht does not teach or suggest that *a cathode exhaust gas pipe penetrates the reservoir, and sucks the purged hydrogen gas, which is introduced through the inlet and stored in the reservoir, through the holes and discharges the purged hydrogen gas diluted by mixing with the cathode exhaust gas*, as recited in claim 1.

Formanski teaches a fuel cell system in which a part of the hydrogen containing exhaust gas is blown out via a mixing device (66). See Formanski, Fig. 6. Formanski, however, does not teach the structure of the mixing device (66). The Examine cites Feucht to compensate for the deficiencies of the Formanski reference.

Feucht teaches an exhaust gas recirculation system for an internal combustion engine. Feucht teaches a mixing vessel (20) including a cylindrical body (52). The cylindrical body has two parallel inlets (42, 46) for receiving combustion air and exhaust gas, respectively, and an outlet (50) for providing the mixture of combustion air and exhaust gas to the internal combustion engine. Feucht teaches that the second inlet (46) extends into the cylindrical body (52) and includes holes (56) through which the exhaust gas is injected into the chamber defined by the cylindrical body so that the exhaust gas is mixed with the combustion air within the cylindrical body.

Feucht, however, does not teach a reservoir for storing the hydrogen gas discharged from the fuel cell, and a mechanism for sucking the hydrogen gas stored in the reservoir into the cathode exhaust gas pipe penetrating the reservoir. Feucht teaches a mixing vessel for mixing gases to recycle the exhaust gas of an internal combustion engine back to the inlet manifold of the internal combustion engine. The mixing vessel of the Feucht reference is not configured to dilute an exhaust gas stored in a reservoir to be discharged, as recited in claim 1.

In contrast, claim 1 recites that a cathode exhaust gas pipe penetrates the reservoir, and sucks the purged hydrogen gas, *which is introduced through the inlet and stored in the reservoir*, through the holes and discharges the purged hydrogen gas diluted by mixing with the cathode exhaust gas. The advantages of the invention in claim 1 are that it sufficiently dilutes and discharges the hydrogen exhaust gas in a low concentration. Feucht does not require a reservoir and merely conduct mixing the exhaust gas with air to recycle the exhaust gas back to the engine.

In light of the foregoing arguments, Applicants submit that the combination of Formanski and Feucht does not teach or suggest all of the limitations of claim 1. Claims 2-6, which depend from claim 1, are not rendered obvious over the cited references. Applicants

therefore request that the Examiner reconsider and withdraw the rejection of claims 1-6 under 35 U.S.C. §103(a), and pass the claims to allowance.

Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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